

## CLAIMS

What is claimed is:

- 1 1. A method for protecting users from Web sites hosting computer viruses  
2 comprising the steps of:  
3 receiving information identifying a Web page selected for access by a  
4 user;  
5 determining whether the Web page is hosted by a Web site that is  
6 included in a database of Web sites related to computer viruses; and  
7 allowing access to the Web page based on whether the Web page includes  
8 a link to a Web site that is included in the database.

- 1 2. The method of claim 1, further comprising the step of:  
2 preventing access to the Web page before determining whether the Web  
3 page is included in the database.

- 1 3. The method of claim 2, wherein the allowing step comprises the steps of:  
2 allowing access to the Web page, if the Web page is determined not to be  
3 included in the database; and  
4 continuing to prevent access to the Web page, if the Web page is  
5 determined to be included in the database.

1 4. The method of claim 1, further comprising the step of:  
2 allowing access to the Web page before determining whether the Web  
3 page is included in the database.

1 5. The method of claim 4, wherein the allowing step comprises the steps of:  
2 continuing to allow access to the Web page, if the Web page is  
3 determined not to be included in the database; and  
4 preventing access to the Web page, if the Web page is determined to be  
5 included in the database.

1 6. The method of claim 1, further comprising the step of:  
2 generating the database of Web sites related to computer viruses.

1 7. The method of claim 6, wherein the generating step comprises the steps  
2 of:  
3 extracting, from a first Web page, a link to a second Web page;  
4 fetching the second Web page using the link;  
5 scanning the second Web page for computer viruses; and  
6 storing information relating to a Web site that is hosting the second Web  
7 page in the database.

1 8. The method of claim 7, wherein the stored information includes  
2 information identifying the Web site that is hosting the second Web page and  
3 information identifying any computer viruses that were found in the second Web  
4 page.

1 9. The method of claim 7, further comprising the steps of:  
2 extracting, from each Web page fetched, links to other Web pages;  
3 fetching the other Web pages using the links;  
4 scanning the other Web pages for computer viruses; and  
5 storing information relating to Web sites that are hosting the other Web  
6 pages in the database.

1 10. The method of claim 9, wherein the stored information includes  
2 information identifying the Web sites that are hosting the other Web pages and  
3 information identifying any computer viruses that were found in the other Web  
4 pages.

1 11. The method of claim 6, wherein the generating step comprises the steps  
2 of:  
3 extracting, from a first Web page, a link to a second Web page;  
4 fetching the second Web page using the link;

5 scanning the second Web page for terminology relating to computer  
6 viruses;  
7 reviewing content of the second Web page to determine whether a Web  
8 site hosting the second Web page is virus hosting, if the second Web page  
9 includes terminology relating to computer viruses; and  
10 storing information relating to the Web site that is hosting the second Web  
11 page in the database.

1 12. The method of claim 11, wherein the stored information includes  
2 information identifying the second Web page and information identifying any  
3 computer viruses that were found in the second Web page.

1 13. The method of claim 11, further comprising the steps of:  
2 extracting, from each Web page fetched, links to other Web pages;  
3 fetching the other Web pages using the links;  
4 scanning the other Web pages for terminology relating to computer  
5 viruses;  
6 reviewing content of those other Web pages that include terminology  
7 relating to computer viruses to determine whether Web sites hosting the other  
8 Web page are virus hosting; and

9 storing information relating to the Web sites that are hosting the other  
10 Web pages in the database.

1 14. The method of claim 13, wherein the stored information includes  
2 information identifying the Web sites that are hosting the other Web pages and  
3 information identifying any computer viruses that were found in the other Web  
4 pages.

1 15. A method for protecting a Web hosting system from hosting a Web page  
2 that contains a link to a computer virus comprising the steps of:  
3 receiving information identifying a first Web page to be hosted by the  
4 Web hosting system;  
5 determining whether the first Web page includes a link to a Web site that  
6 is included in a database of Web sites related to computer viruses; and  
7 allowing hosting of the first Web page based on whether the Web page  
8 includes a link to a Web site that is included in the database.

1 16. The method of claim 15, wherein the determining step comprises the steps  
2 of:  
3 extracting, from the first Web page, links to other Web pages; and

4 determining whether the other Web pages are hosted by Web sites that are  
5 included in the database.

1 17. The method of claim 16, wherein the allowing step comprises the steps of:  
2 refusing to host the first Web page, if the first Web page includes a link to  
3 a Web page that is hosted by a Web site that is included in the database; and  
4 hosting the first Web page, if the first Web page includes no links to a any  
5 Web pages that are hosted by a Web site that is included in the database.

1 18. The method of claim 17, further comprising the step of:  
2 generating the database of Web sites related to computer viruses.

1 19. The method of claim 18, wherein the generating step comprises the steps  
2 of:  
3 extracting, from a first Web page, a link to a second Web page;  
4 fetching the second Web page using the link;  
5 scanning the second Web page for computer viruses; and  
6 storing information relating to a Web site that is hosting the second Web  
7 page in the database.



5 scanning the second Web page for terminology relating to computer  
6 viruses;  
7 reviewing content of the second Web page to determine whether a Web  
8 site hosting the second Web page is virus hosting, if the second Web page  
9 includes terminology relating to computer viruses; and  
10 storing information relating to the Web site that is hosting the second Web  
11 page in the database.

1 24. The method of claim 23, wherein the stored information includes  
2 information identifying the second Web page and information identifying any  
3 computer viruses that were found in the second Web page.

1 25. The method of claim 23, further comprising the steps of:  
2 extracting, from each Web page fetched, links to other Web pages;  
3 fetching the other Web pages using the links;  
4 scanning the other Web pages for terminology relating to computer  
5 viruses;  
6 reviewing content of those other Web pages that include terminology  
7 relating to computer viruses to determine whether Web sites hosting the other  
8 Web page are virus hosting; and



9 storing information relating to the Web sites that are hosting the other  
10 Web pages in the database.

1 26. The method of claim 25, wherein the stored information includes  
2 information identifying the Web sites that are hosting the other Web pages and  
3 information identifying any computer viruses that were found in the other Web  
4 pages.

1 27. A system for protecting users from Web sites hosting computer viruses  
2 comprising:  
3 a processor operable to execute computer program instructions;  
4 a memory operable to store computer program instructions executable  
5 by the processor; and  
6 computer program instructions stored in the memory and executable to  
7 perform the steps of:  
8 receiving information identifying a Web page selected for access by a  
9 user;  
10 determining whether the Web page is hosted by a Web site that is  
11 included in a database of Web sites related to computer viruses; and  
12 allowing access to the Web page based on whether the Web page includes  
13 a link to a Web site that is included in the database.

1 28. The system of claim 27, further comprising computer program  
2 instructions executable to perform the step of:  
3 preventing access to the Web page before determining whether the Web  
4 page is included in the database.

1 29. The system of claim 28, wherein the allowing step comprises the steps of:  
2 allowing access to the Web page, if the Web page is determined not to be  
3 included in the database; and  
4 continuing to prevent access to the Web page, if the Web page is  
5 determined to be included in the database.

1 30. The system of claim 27, further comprising computer program  
2 instructions executable to perform the step of:  
3 allowing access to the Web page before determining whether the Web  
4 page is included in the database.

1 31. The system of claim 30, wherein the allowing step comprises the steps of:  
2 continuing to allow access to the Web page, if the Web page is  
3 determined not to be included in the database; and

4 preventing access to the Web page, if the Web page is determined to be  
5 included in the database.

1 32. The system of claim 27, further comprising computer program  
2 instructions executable to perform the step of:

3 generating the database of Web sites related to computer viruses.

1 33. The system of claim 32, wherein the generating step comprises the steps  
2 of:

3 extracting, from a first Web page, a link to a second Web page;

4 fetching the second Web page using the link;

5 scanning the second Web page for computer viruses; and

6 storing information relating to a Web site that is hosting the second Web  
7 page in the database.

1 34. The system of claim 33, wherein the stored information includes  
2 information identifying the Web site that is hosting the second Web page and  
3 information identifying any computer viruses that were found in the second Web  
4 page.

1 35. The system of claim 33, further comprising computer program  
2 instructions executable to perform the steps of:  
3 extracting, from each Web page fetched, links to other Web pages;  
4 fetching the other Web pages using the links;  
5 scanning the other Web pages for computer viruses; and  
6 storing information relating to Web sites that are hosting the other Web  
7 pages in the database.

1 36. The system of claim 35, wherein the stored information includes  
2 information identifying the Web sites that are hosting the other Web pages and  
3 information identifying any computer viruses that were found in the other Web  
4 pages.

1 37. The system of claim 32, wherein the generating step comprises the steps  
2 of:  
3 extracting, from a first Web page, a link to a second Web page;  
4 fetching the second Web page using the link;  
5 scanning the second Web page for terminology relating to computer  
6 viruses;

7 reviewing content of the second Web page to determine whether a Web  
8 site hosting the second Web page is virus hosting, if the second Web page  
9 includes terminology relating to computer viruses; and  
10 storing information relating to the Web site that is hosting the second Web  
11 page in the database.

1 38. The system of claim 37, wherein the stored information includes  
2 information identifying the second Web page and information identifying any  
3 computer viruses that were found in the second Web page.

1 39. The system of claim 37, further comprising computer program  
2 instructions executable to perform the steps of:

3 extracting, from each Web page fetched, links to other Web pages;  
4 fetching the other Web pages using the links;  
5 scanning the other Web pages for terminology relating to computer  
6 viruses;

7 reviewing content of those other Web pages that include terminology  
8 relating to computer viruses to determine whether Web sites hosting the other  
9 Web page are virus hosting; and  
10 storing information relating to the Web sites that are hosting the other  
11 Web pages in the database.

1 40. The system of claim 39, wherein the stored information includes  
2 information identifying the Web sites that are hosting the other Web pages and  
3 information identifying any computer viruses that were found in the other Web  
4 pages.

1 41. A system for protecting a Web hosting system from hosting a Web page  
2 that contains a link to a computer virus comprising:

3 a processor operable to execute computer program instructions;

4 a memory operable to store computer program instructions executable  
5 by the processor; and

6 computer program instructions stored in the memory and executable to  
7 perform the steps of:

8 receiving information identifying a first Web page to be hosted by the  
9 Web hosting system;

10 determining whether the first Web page includes a link to a Web site that  
11 is included in a database of Web sites related to computer viruses; and

12 allowing hosting of the first Web page based on whether the Web page  
13 includes a link to a Web site that is included in the database.

1 42. The system of claim 41, wherein the determining step comprises the steps  
2 of:  
3 extracting, from the first Web page, links to other Web pages; and  
4 determining whether the other Web pages are hosted by Web sites that are  
5 included in the database.

1 43. The system of claim 42, wherein the allowing step comprises the steps of:  
2 refusing to host the first Web page, if the first Web page includes a link to  
3 a Web page that is hosted by a Web site that is included in the database; and  
4 hosting the first Web page, if the first Web page includes no links to a any  
5 Web pages that are hosted by a Web site that is included in the database.

1 44. The system of claim 43, further comprising computer program  
2 instructions executable to perform the steps of:  
3 generating the database of Web sites related to computer viruses.

1 45. The system of claim 44, wherein the generating step comprises the steps  
2 of:  
3 extracting, from a first Web page, a link to a second Web page;  
4 fetching the second Web page using the link;  
5 scanning the second Web page for computer viruses; and

6 storing information relating to a Web site that is hosting the second Web  
7 page in the database.

1 46. The system of claim 45, wherein the stored information includes  
2 information identifying the Web site that is hosting the second Web page and  
3 information identifying any computer viruses that were found in the second Web  
4 page.

1 47. The system of claim 45, further comprising computer program  
2 instructions executable to perform the steps of:

3 extracting, from each Web page fetched, links to other Web pages;  
4 fetching the other Web pages using the links;  
5 scanning the other Web pages for computer viruses; and  
6 storing information relating to Web sites that are hosting the other Web  
7 pages in the database.

1 48. The system of claim 47, wherein the stored information includes  
2 information identifying the Web sites that are hosting the other Web pages and  
3 information identifying any computer viruses that were found in the other Web  
4 pages.



1 49. The system of claim 44, wherein the generating step comprises the steps  
2 of:

3 extracting, from a first Web page, a link to a second Web page;

4 fetching the second Web page using the link;

5 scanning the second Web page for terminology relating to computer  
6 viruses;

7 reviewing content of the second Web page to determine whether a Web  
8 site hosting the second Web page is virus hosting, if the second Web page  
9 includes terminology relating to computer viruses; and

10 storing information relating to the Web site that is hosting the second Web  
11 page in the database.

1 50. The system of claim 49, wherein the stored information includes  
2 information identifying the second Web page and information identifying any  
3 computer viruses that were found in the second Web page.

1 51. The system of claim 49, further comprising computer program  
2 instructions executable to perform the steps of:

3 extracting, from each Web page fetched, links to other Web pages;

4 fetching the other Web pages using the links;

5 scanning the other Web pages for terminology relating to computer  
6 viruses;  
7 reviewing content of those other Web pages that include terminology  
8 relating to computer viruses to determine whether Web sites hosting the other  
9 Web page are virus hosting; and  
10 storing information relating to the Web sites that are hosting the other  
11 Web pages in the database.

1 52. The system of claim 51, wherein the stored information includes  
2 information identifying the Web sites that are hosting the other Web pages and  
3 information identifying any computer viruses that were found in the other Web  
4 pages.

1 53. A computer program product for protecting users from Web sites hosting  
2 computer viruses, comprising:  
3 a computer readable medium;  
4 computer program instructions, recorded on the computer readable  
5 medium, executable by a processor, for performing the steps of  
6 receiving information identifying a Web page selected for access by a  
7 user;

8 determining whether the Web page is hosted by a Web site that is  
9 included in a database of Web sites related to computer viruses; and  
10 allowing access to the Web page based on whether the Web page includes  
11 a link to a Web site that is included in the database.

1 54. The computer program product of claim 53, further comprising computer  
2 program instructions executable to perform the steps of:  
3 preventing access to the Web page before determining whether the Web  
4 page is included in the database.

1 55. The computer program product of claim 54, wherein the allowing step  
2 comprises the steps of:  
3 allowing access to the Web page, if the Web page is determined not to be  
4 included in the database; and  
5 continuing to prevent access to the Web page, if the Web page is  
6 determined to be included in the database.

1 56. The computer program product of claim 53, further comprising computer  
2 program instructions executable to perform the steps of:  
3 allowing access to the Web page before determining whether the Web  
4 page is included in the database.

1 57. The computer program product of claim 56, wherein the allowing step  
2 comprises the steps of:  
3 continuing to allow access to the Web page, if the Web page is  
4 determined not to be included in the database; and  
5 preventing access to the Web page, if the Web page is determined to be  
6 included in the database.

1 58. The computer program product of claim 53, further comprising computer  
2 program instructions executable to perform the steps of:  
3 generating the database of Web sites related to computer viruses.

1 59. The computer program product of claim 58, wherein the generating step  
2 comprises the steps of:  
3 extracting, from a first Web page, a link to a second Web page;  
4 fetching the second Web page using the link;  
5 scanning the second Web page for computer viruses; and  
6 storing information relating to a Web site that is hosting the second Web  
7 page in the database.

1 60. The computer program product of claim 59, wherein the stored  
2 information includes information identifying the Web site that is hosting the  
3 second Web page and information identifying any computer viruses that were  
4 found in the second Web page.

1 61. The computer program product of claim 59, further comprising computer  
2 program instructions executable to perform the steps of:

3 extracting, from each Web page fetched, links to other Web pages;  
4 fetching the other Web pages using the links;  
5 scanning the other Web pages for computer viruses; and  
6 storing information relating to Web sites that are hosting the other Web  
7 pages in the database.

1 62. The computer program product of claim 61, wherein the stored  
2 information includes information identifying the Web sites that are hosting the  
3 other Web pages and information identifying any computer viruses that were  
4 found in the other Web pages.

1 63. The computer program product of claim 58, wherein the generating step  
2 comprises the steps of:

3 extracting, from a first Web page, a link to a second Web page;

4           fetching the second Web page using the link;  
5           scanning the second Web page for terminology relating to computer  
6   viruses;  
7           reviewing content of the second Web page to determine whether a Web  
8   site hosting the second Web page is virus hosting, if the second Web page  
9   includes terminology relating to computer viruses; and  
10          storing information relating to the Web site that is hosting the second Web  
11   page in the database.

1   64.   The computer program product of claim 63, wherein the stored  
2   information includes information identifying the second Web page and  
3   information identifying any computer viruses that were found in the second Web  
4   page.

1   65.   The computer program product of claim 63, further comprising computer  
2   program instructions executable to perform the steps of:

3           extracting, from each Web page fetched, links to other Web pages;  
4           fetching the other Web pages using the links;  
5           scanning the other Web pages for terminology relating to computer  
6   viruses;

7 reviewing content of those other Web pages that include terminology  
8 relating to computer viruses to determine whether Web sites hosting the other  
9 Web page are virus hosting; and  
10 storing information relating to the Web sites that are hosting the other  
11 Web pages in the database.

1 66. The computer program product of claim 65, wherein the stored  
2 information includes information identifying the Web sites that are hosting the  
3 other Web pages and information identifying any computer viruses that were  
4 found in the other Web pages.

1 67. A computer program product for protecting a Web hosting system from  
2 hosting a Web page that contains a link to a computer virus, comprising:  
3 a computer readable medium;  
4 computer program instructions, recorded on the computer readable  
5 medium, executable by a processor, for performing the steps of  
6 receiving information identifying a first Web page to be hosted by the  
7 Web hosting system;  
8 determining whether the first Web page includes a link to a Web site that  
9 is included in a database of Web sites related to computer viruses; and

10           allowing hosting of the first Web page based on whether the Web page  
11 includes a link to a Web site that is included in the database.

1   68.    The computer program product of claim 67, wherein the determining step  
2 comprises the steps of:

3           extracting, from the first Web page, links to other Web pages; and  
4           determining whether the other Web pages are hosted by Web sites that are  
5 included in the database.

1   69.    The computer program product of claim 68, wherein the allowing step  
2 comprises the steps of:

3           refusing to host the first Web page, if the first Web page includes a link to  
4 a Web page that is hosted by a Web site that is included in the database; and  
5           hosting the first Web page, if the first Web page includes no links to a any  
6 Web pages that are hosted by a Web site that is included in the database.

1   70.    The computer program product of claim 69, further comprising computer  
2 program instructions executable to perform the steps of:

3           generating the database of Web sites related to computer viruses.



1 71. The computer program product of claim 70, wherein the generating step  
2 comprises the steps of:  
3 extracting, from a first Web page, a link to a second Web page;  
4 fetching the second Web page using the link;  
5 scanning the second Web page for computer viruses; and  
6 storing information relating to a Web site that is hosting the second Web  
7 page in the database.

1 72. The computer program product of claim 71, wherein the stored  
2 information includes information identifying the Web site that is hosting the  
3 second Web page and information identifying any computer viruses that were  
4 found in the second Web page.

1 73. The computer program product of claim 71, further comprising computer  
2 program instructions executable to perform the steps of:  
3 extracting, from each Web page fetched, links to other Web pages;  
4 fetching the other Web pages using the links;  
5 scanning the other Web pages for computer viruses; and  
6 storing information relating to Web sites that are hosting the other Web  
7 pages in the database.

1 74. The computer program product of claim 73, wherein the stored  
2 information includes information identifying the Web sites that are hosting the  
3 other Web pages and information identifying any computer viruses that were  
4 found in the other Web pages.

1 75. The computer program product of claim 70, wherein the generating step  
2 comprises the steps of:

3 extracting, from a first Web page, a link to a second Web page;

4 fetching the second Web page using the link;

5 scanning the second Web page for terminology relating to computer  
6 viruses;

7 reviewing content of the second Web page to determine whether a Web  
8 site hosting the second Web page is virus hosting, if the second Web page  
9 includes terminology relating to computer viruses; and

10 storing information relating to the Web site that is hosting the second Web  
11 page in the database.

1 76. The computer program product of claim 75, wherein the stored  
2 information includes information identifying the second Web page and  
3 information identifying any computer viruses that were found in the second Web  
4 page.

1 77. The computer program product of claim 75, further comprising computer  
2 program instructions executable to perform the steps of:  
3 extracting, from each Web page fetched, links to other Web pages;  
4 fetching the other Web pages using the links;  
5 scanning the other Web pages for terminology relating to computer  
6 viruses;  
7 reviewing content of those other Web pages that include terminology  
8 relating to computer viruses to determine whether Web sites hosting the other  
9 Web page are virus hosting; and  
10 storing information relating to the Web sites that are hosting the other  
11 Web pages in the database.

1 78. The computer program product of claim 77, wherein the stored  
2 information includes information identifying the Web sites that are hosting the  
3 other Web pages and information identifying any computer viruses that were  
4 found in the other Web pages.